Special Issue

Analysis and Application of Mechanical System Vibrations

Message from the Guest Editor

Vibrations in mechanical systems constitute a fundamental aspect of machine dynamics, finding wide application in design, production, and maintenance. Vibrations occur when a system oscillates under the influence of unbalanced external or internal forces, and their analysis enables the prediction of system behavior, improvement of its performance, and prevention of failures. Mathematical models, such as differential equations and modal analysis, are used to describe vibrations, as well as computational methods like finite element analysis. Artificial intelligence-based methods are increasingly being used to describe vibrations. Based on measurements of parameters describing vibration signals, technical condition can be assessed because: they are easy to measure under normal operating conditions; vibration processes are characterized by high information transfer rates; vibrations enable the assessment of the condition of the entire object, as well as its individual components and assemblies; and vibration processes are characterized by a high information content in the signal.

Guest Editor

Dr. Grzegorz Szymański
Institute of Transport, Poznan University of Technology, 60-965 Poznan, Poland

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Applied Sciences
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
applsci@mdpi.com

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo
Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32, 20133 Milano, Italy

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